Operable Unit 1– Former Export Plant
Remedial Action Summary
Libby Asbestos Superfund Site
Libby, Montana
July 5, 2011

As outlined in the Record of Decision for the Former Export Plant (ROD [EPA 2010]), Operable Unit 1 (OU1) has been divided into 3 distinct areas. These areas include; the Former Export Plant (Area 1), Riverfront Park (Area 2), and the Embankments (Area 3). Each of the three areas will require some level of response action. In addition, areas adjacent to Area 2 were included in the design (under and east of the Highway 37 bridge). The following sections provide a summary of the planned remediation and restoration activities that will occur in each of the areas.

The remedial action design for OU1 is based on multiple sampling and inspection events. This includes all previous investigations described within the Final Remedial Investigation Report, OU1 - Former Export Plant Site (CDM Federal Programs Corporation [CDM] 2009), and recent supplemental sampling activities.

The City of Libby (City) began developing a conceptual design for Riverfront Park (park) and requested that the United States Environmental Protection Agency (EPA) incorporate several elements into the proposed remedial action. The City hired WGM Group (WGM) from Missoula, Montana to prepare a conceptual design of the park. The City's proposed design includes the relocation of City Service Road, several parking areas, stormwater drainage corridors and utility corridors (corridors), and green/park space. WGM provided CDM with the final grading surfaces for this conceptual park design, the proposed City Service Road centerline and dimensions, corridor locations and dimensions, as well as the proposed hardscape surface locations. Because the proposed design is still a conceptual plan, the corridors were overestimated to accommodate minor shifts in final size and layout.

All remedial activities will be conducted in accordance with the Accident Prevention Plan (CDM 2011); Response Action Work Plan (RAWP) (PRI 2011); and Response Action Sampling and Analysis Plan, Revision 2 (CDM 2011).

OU1 Area 1 – Remediation Activities

Area 1 is located on the southwest of Highway 37 and includes the area surrounding David Thompson Search and Rescue Spur Road, and the Former Export Plant.
Surface contamination in Area 1 is defined by soil sample results with detectable levels of Libby Amphibole asbestos (LA), and visible LA source materials (e.g., vermiculite). As a conservative measure, the entire area will be covered with at least 18 inches based on the final grading surface provided by WGM. In order to achieve a full 18 inches of cover, excavation will be required in some areas, while other areas will require cover with clean fill only (in these areas, the final grade is more than 18 inches higher than the existing grade). Excavation may continue beyond design depth (to a maximum of 3 feet below existing grade) based on visual inspection and confirmation sampling, in accordance with current EPA removal and clearance criteria.

In addition, the corridors provided by WGM will be excavated to the minimum widths and depths provided by WGM, as described below.

Utility Corridors (Please refer to Sheet C3):

The conceptual park design provided by WGM includes location and excavation requirements for multiple utility corridors. These utility corridors include municipal water lines, a water truck filling station extension, sanitary sewer, irrigation lines, and dry utility lines (electric, phone, fiber-optics, etc.). Sheet C3 of the remedial action design provides details on the location, depth, and width for all utility corridor excavations. The design includes over-excavation both laterally and vertically to allow for sufficient clean working space for any future utility work.

The excavation elevations are based on the final grading surface provided by WGM and not the existing ground surface. The excavation elevations are presented on Sheets G3 and G4. The project removal contractor (Contractor) will use caution when working around existing infrastructure and shall verify the location of the lines prior to commencement of work.

Storm Drainage Corridors (Please refer to Sheet C4):

The locations, layout, and depths of the storm drainage corridors were provided by WGM. Most of the corridors are located within Area 1 and will be excavated to 3 feet below the WGM proposed final grading surface. One corridor (Storm Swale "O") and part of two corridors (Storm Swale "H" and "G") are located in Areas 2 and 3 and will be excavated 3 feet below the existing surface. Elevations are provided on Sheet G4. In addition, some of the storm drainage corridors are co-located with utility corridors (directly over utility corridors). In those cases, the deepest excavation elevation will prevail.

Asphalt Removal (Please refer to Sheet C5):

As part of the remedial action, the Contractor shall remove the existing asphalt surface on the existing City Service Road and Spur Road as shown on Sheet C5. Based on 4 inches of asphalt, it is estimated that 328 cubic yards of asphalt will be removed. During the activities on the road, traffic will have to be diverted to an alternate route. All activities shall be coordinated with the City and the Montana Department of Transportation in advance.

Proposed City Service Road (Please refer to Sheet C6):

The centerline and width of the proposed City Service Road were provided by WGM. The proposed road area will be excavated to a depth of 24 inches below existing grade. This excavation starts at the end of the Highway 37 approach and ends at the west site boundary as shown on Sheet C6.

Both sides of the existing Spur Road are currently protected by a guard rail. This railing will be removed and cleaned during excavation activities. All salvageable railing materials (including posts) will be decontaminated and returned to the City for future use.

Remainder of Area 1 (green/park space):

The remainder of Area 1 that is not part of the utility corridors, storm drainage corridors or road excavation will be excavated and/or covered with clean fill to the elevations shown on Sheet G3 and G4. The excavation elevations are 18 inches below the final grading surface provide by WGM. This excavation includes removal of the former loading dock near the rail road spur. It should be noted that the final grading surface provided by WGM was modified to not include the tree berms. These areas will be restored to surrounding grade.

In addition, excavation in the area surrounding the railroad spur will be limited as to not disturb the integrity of the existing spur structure.

OU1 Area 1 – Initial Grading and Restoration Activities

Currently, EPA is proposing the Contractor complete all initial and final grading and restoration, excluding final hardscape surfaces (e.g., asphalt). This will include placement of all restoration fill materials, grading of these materials, and installation of final vegetation (based on current project vegetation options).

Details of each type of corridor, final grading surface, and hardscape areas were provided by WGM. Each type of corridor and hardscape area will be backfilled with the specified material to the elevations calculated from the WGM proposed final grading surface. All remaining areas will be restored to the final grading surface and vegetated.

Utility Corridors (Please refer to Sheet C9):

All utility corridors will be backfilled with common fill to the elevations provided in Sheets G3 and G4. The City may install the utilities before the completion of the remedial action on this site. If the City chooses not to complete the installation at this time, the City will be responsible for re-excavating the corridors to install utilities to the City's specifications at a future date.

Storm Drainage Corridors (Please refer to Sheet C10):

The WGM storm drainage corridors will be 1 foot deep (at their deepest point). The upper layer consists of 6 inches of topsoil underlain by 12 inches of 2 to 3 inch minus crushed gravel. Nine of the storm drains will be constructed during this remedial action. These storm drainage corridors (G, H, I, J1, J2, K, M, N1 and N2) will be backfilled with 2 to 3 inch minus crushed gravel to the elevations shown on Sheet G4, overlain by 6 inches of topsoil. The remaining corridors will be backfilled with 2 to 3 inch minus crushed gravel (drain rock) to the elevations shown on Sheet G4. In addition, these corridors will be backfilled to the existing grade with common fill overlain by 6 inches of topsoil. Before placing the common fill over the drain rock, a geotextile barrier will be installed between the materials to minimize plugging of the crushed gravel.

Hardscape Restoration (Please refer to Sheet C11)

The road corridor and parking areas were provided by WGM as well as the section details for the restoration of each type of hardscape surface. The details are shown on Sheet D1.

Parking Areas:

The parking areas will be backfilled to the elevations shown on Sheet G4. The final parking area detail calls for 18 inches of ¾-inch minus crushed gravel. The City will be responsible for providing and installing any additional restoration materials (e.g., asphalt).

City Service Road:

The area proposed for City Service Road will be backfilled to the elevations shown on Sheet G4 as determined from the final grading surface. The WGM detail shows at final grade, 4 inches of asphalt

underlain by 8 inches of ¾- inch minus crushed base course underlain by 12 inches of pit run gravel. The Contractor will backfill to the elevations shown on Sheet G4, which is 4 inches below the final grade provided by WGM. The City will be responsible for providing and installing any additional restoration materials (e.g., asphalt). MPWSS Specifications shall be followed for the road construction or as directed by the City's representative.

Restoration of City Service Road will include build-up of the new ramp to the MT Highway 37 approach. This ramp will replace the existing spur road and align with the proposed relocation of City Service Road.

Remainder of Area 1:

The remainder of Area 1 will be restored with common fill overlain by 6 inches of topsoil, to the elevations shown on Sheet C13. All topsoil areas will then be vegetated with hydroseed.

OU1 Area 2 – Remediation Activities (Refer to sheet C2)

Surface contamination in Area 2 is defined by soil sample results with detectable levels of LA, and visible LA source materials.

Area 2 has been subdivided into 3 separate areas based on current use and planned remediation/restoration activities. These areas include; Riverfront Park, the former boat launch, and the river bank. Riverfront Park includes the parking area and picnic area between the current boat launch and Montana Highway 37.

Riverfront Park
All areas with detectable levels of LA asbestos will be excavated to a depth of 18 inches below existing grade. In addition, low levels of vermiculite were observed within isolated portions of this area during previous investigation activities. A visual inspection of the soil will be completed in these areas during remediation activities. If vermiculite is observed, a localized removal/restoration will occur. Excavation may continue beyond this depth (to a maximum of 3 feet below existing grade) based on visual inspection and confirmation sampling, in accordance with current EPA removal and clearance criteria.

Former Boat Launch
Remediation in this area will consist of excavating soil to install a permanent and functional boat launch. The existing concrete pad will be left in-place and protected during remediation/restoration activities. The gravel drive above the concrete pad will be excavated to a depth of 18 inches below existing grade.

River Bank
Surface contamination in this area is limited to portions of the riverbank upstream of the eastern boat launch, and includes soil sample results with detectable levels of LA, and visible LA source materials (e.g., vermiculite) as determined by previous investigation and removal activities. Remediation in this area will consist of excavating soil, rock, and vegetation. This area will be restored as described in the following sections.

OU1 Area 2 – Restoration Activities

Riverfront Park (refer to sheet C8)
All excavated areas will be restored to existing conditions (e.g., gravel, hydroseed, etc.). This includes placing 12 inches of common fill and 6 inches of topsoil in areas that currently have grass on them.

Former Boat Launch (refer to sheet C12)
An articulated concrete block/mat boat ramp will be installed from the top of the former boat launch (gravel area) down to existing concrete pad.

River Bank (refer to sheet C12)
Planted rip rap will be installed along specific sections of the river bank. This rip rap will stabilize the bank to prevent erosion and provide protection for the former boat launch. In addition, limited restoration will occur to stabilize other portions of the riverbank to prevent further erosion and damage to the former boat launch area. Within some areas a sacrificial toe will be installed to minimize souring during high flows. As discussed previously agreed, the City will be responsible for re-vegetation of the riverbank area.

OU1 Area 3 – Remediation Activities (Refer to sheet C2)

Surface contamination in Area 3 is defined by soil sample results with detectable levels of LA and visible LA source materials.

All areas with detectable levels of LA asbestos will be excavated to a depth of 6 inches below existing grade, with the exception of immediately below the Montana Highway 37 bridge. The area below the bridge will be excavated to 12 and 18 inches as shown on Sheet C2. This area will be covered with a geotextile fabric and 12 inches of structural fill. In addition, low levels of vermiculite were observed within isolated portions of this area during previous investigation activities. A visual inspection of the soil will be completed in these areas during remediation activities. If vermiculite is observed, a localized removal/restoration will occur.

OU1 Area 3 – Restoration Activities (Refer to sheet C8)

All excavated areas will be restored with 12 inches of fill material (9 inches of common fill overlain by 3 inches of topsoil) and hydroseeded. Fill material will be graded to blend into the surrounding slope. Erosion control blankets will be installed to prevent erosion while vegetation is establishing.

OU1 Final Restoration Credits

The EPA is proposing the Contractor complete all initial and final grading and restoration excluding hardscape surfaces. The City will be responsible for providing and installing restoration materials in addition to those discussed above. This includes hardscape surfacing (e.g., asphalt, concrete), utilities, utility bedding material, etc.

As previously agreed, the EPA will provide compensation for several restoration related items. The costs associated with these items are as follows:

1. Compensation for asphalt associated with the existing spur road - $20,126.10 *(includes equipment, labor, and material for asphalt installation1)*[1]

2. Compensation for design-related expenses for Riverfront Park to ensure good site drainage and long-term protection of the cover - $15,000.00

3. Compensation for vegetation along the riverbank portion of Area 2[2] - $5,832.50

The total cost associated with the installation of restoration materials, compensation for the spur road asphalt, and design of Riverfront Park is $40,958.60.

[1]*As previously agreed, EPA is including the cost for replacing asphalt equivalent to the area covered by the existing Spur Road. The new ramp to the Highway 37 approach will be built up during grading and restoration activities, therefore this estimate does not include materials to build up the ramp.*

[2]*As previously agreed, the City will complete re-vegetation of the riverbank portion of Area 3.*

[*]*All cost estimates are based on 2010 Libby Project fill material costs.*

Outstanding Items

Currently the City and EPA are still negotiating some items that will have to be clarified before the design can be finalized. The major items identified are:

1. *Utilities.* The City has indicated they may be ready to install utilities within the utility corridors at the time of remedial activities. This will require coordination and scheduling with the project removal contractor. EPA is proposing two potential options regarding utility installation:

    a. *Option 1* – If the City chooses to install utilities at the time of remediation, this activity will be completed at the start of the project. The Contractor will excavate the corridors first, leaving them open for the City to install utilities (providing a clean area/surface to work on). The City will then be responsible for installing utilities and backfilling the corridor with material provided by the Contractor. The Contractor will then proceed with implementation of the remaining remedial action design.

    b. *Option 2* – If the City chooses to install utilities at a later date, the Contractor will excavate the corridors in sequence with other excavation activities. The corridors will be excavated to depth where "clean" material is identified. The contractor will then install a locater tape (in the lateral center of the corridor) and restore to the appropriate restoration grade. The City will then be required to re-excavate the corridors when utilities will be installed.

2. *Boat launch*. The current remedial action design includes restoration of the east boat launch with the installation of an articulated block boat launch. The City has indicated they may

prefer a solid slab boat launch. The City must provide its final decision on restoration of the east boat launch.

3. *Construction sequence and schedule.* Construction activities will limit access to the entire site and property east of the site along City Service Rd. The City and EPA must agree upon a construction schedule based on site use and alternate traffic routing options. The current construction sequence includes removing the exiting City Service Road after the relocated road base is installed. The may create the need for temporary traffic re-routing. The City shall provide support for traffic control and re-routing (if necessary) during remediation and restoration activities.

4. *Rail Spur*. The current remedial action design includes limited excavation and restoration near the existing rail spur. These activities will be conducted in a manner to not disturb the integrity of the spur. If the City were to decide the spur will be removed, the design will be revised to include full excavation/restoration in this area. All salvageable spur materials will be removed, decontaminated, and returned to the City for future use. Due to the current condition of the spur, it is expected that most materials will not be salvageable.

5. *Parking Areas:* The final grading surface provided by WGM includes 4 inches of asphalt as the final surface. EPA is proposing two potential options regarding restoration of these areas:

    a. *Option 1* – The Contractor will backfill all parking areas with ¾-inch minus crushed gravel to 4 inches below the final grade provided by WGM. Entrance/exit points for the parking areas will be graded to provide a smooth transition from City Service Road.

    b. *Option 2* – The Contractor will backfill all parking areas with ¾-inch minus crushed gravel to the final grading surface provided by WGM. The City would then be responsible for preparing the surface for hardscape installation at a later date. This preparation may include removal of material to bring the surface to the appropriate grade.